

## **TECHNICAL SUMMARY AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION**

### **Description of Application**

- Applicant:** Waste Control Specialists LLC (WCS)  
Radioactive Material License (RML) No.: Ro4100  
Customer Number: CN600616890  
Regulated Entity Number: RN101702439
- Action:** Proposed Major Amendment of RML No. Ro4100 for low-level radioactive waste disposal and storage and processing of radioactive waste.
- Location:** WCS is located at 9998 State Highway 176 West, Andrews, Andrews County, Texas 79714, near the Texas-New Mexico state line in Andrews County, Texas, as described in the Technical Information section below.
- General:** WCS currently holds a radioactive material license (RML No. Ro4100) for a low-level radioactive waste (LLRW) land disposal facility and a radioactive waste storage and processing facility. WCS seeks to amend the current LLRW facility license in three amendment applications.
- Request:** WCS submitted an original major amendment application (the C-14 application) to the Texas Commission on Environmental Quality (TCEQ) on August 5, 2013 to modify License Condition (LC) 5 to remove the carbon-14 (C-14) limit in the Compact Waste Disposal Facility (CWF) and to remove the C-14, technetium-99 (Tc-99) and iodine-129 (I-129) limits in the Federal Waste Disposal Facility (FWF); modify LC 46 to authorize the disposal of large quantities of depleted uranium (DU); and remove LC 143 to allow for the disposal of all Class A, B and C waste. A revision of the August 5, 2013 C-14 application was submitted on November 22, 2013 and supplemental information on January 28, 2014.
- WCS submitted an original major amendment application (the expansion application) to the TCEQ on August 5, 2013 to expand the CWF horizontally and vertically to allow 9,000,000 cubic feet of total waste volume and to expand the FWF horizontally and vertically to replace the Non-Containerized Disposal Unit (NCDU). The amendment requests an increase in CWF volume from 2,310,000 cubic feet to 9,000,000 cubic feet. The applicant requests a revision to the license that would allow an increase in the CWF decay corrected radioactivity through minor amendment. The amendment requests an increased FWF waste capacity from 26,000,000 cubic feet to 31,000,000 cubic feet. The applicant does not request an increase in the FWF waste volume limit of 26,000,000 cubic feet. The applicant does not request an increase in FWF

radioactivity. A revision of the August 5, 2013 expansion application was submitted on October 28, 2013. Supplements to the expansion application were submitted on February 17, 2014 and February 21, 2014.

WCS submitted an original major amendment application (the FA application) to the TCEQ on August 8, 2013 to revise the financial assurance amounts and to implement a methodology to adjust the financial assurance annually without amending the license. Supplements to the August 8, 2013 FA application was submitted on December 13, 2013 and February 28, 2014.

Authority: A TCEQ radioactive material license for the receipt and disposal of LLRW and for the storage and processing of radioactive waste is required by Chapter 401 of the Texas Health and Safety Code. An amended license has been prepared in accordance with the applicable requirements of Title 30, Texas Administrative Code (TAC) Chapters 281, 305 and 336.

### **Administrative Information**

At the time of this review, WCS did not have any delinquent fees.

The regulated entity, WCS, has a compliance history classification of satisfactory, with a rating of 2.21.

The WCS site has a compliance history classification of satisfactory, with a rating of 2.21.

### **Technical Information and Note Regarding an Environmental Analysis:**

This license amendment has been reviewed in accordance with applicable rules and statutes, including 30 TAC Chapter 336 (Radioactive Substance Rule) and Chapter 401 of the Texas Health and Safety Code. The review of the requests included an assessment of the radiological and non-radiological effects of the license changes on the public health and safety.

Pursuant to Texas Health & Safety Code at §401.113 and 30 TAC §305.62(k), the Executive Director has determined that the proposed licensed activity does not have a significant effect on the human environment and does not require a standalone environmental analysis; however, this technical summary and the review of the application and performance assessment did include the elements of an environmental analysis in order to make this determination -- including: (1) an assessment of radiological and non-radiological effects of the activity on the public health; (2) an assessment of any effect on a waterway or groundwater resulting from the activity; (3) consideration of alternatives to the activities to be conducted under the license; and (4) consideration of the long term effects.

The proposed changes in the C-14 amendment application were supported by an updated Performance Assessment (PA), which has been refined from the initial PA to

address the most current societal, geological and environmental conditions of the disposal facility. The updated PA showed that performance objectives of 30 TAC 336.723-727 would be met if the activities of C-14 in the CWF and the C-14, Tc-99 and I-129 in the FWF were set at fifty (50) times the total activity requested in the Original Application Materials for License to Authorize Near-Surface Land Disposal of Low-Level Radioactive Waste (Original Application). The inventory used to justify the request is far greater than the amount of C-14, I-129 and Tc-99 that will likely be received at the site.

- LC 5.C. was removed (text replaced with "reserved") to remove the C-14 limit for the CWF, and
- LC 5.D. was removed (text replaced with "reserved") to remove the C-14, Tc-99, and I-129 limits for the FWF.

Additionally, the updated PA showed that the performance objectives would be met if all Class A, B and C waste streams were authorized. It was shown that the performance objectives would be met through the development of a generic Class C waste stream that would replace 10% of the highest activity expected volume for the CWF. The volumes of the two generic Class C waste streams were assumed to consist of irradiated hardware and resins and were based on actual waste stream receipts to date and actual manifest data from the Barnwell disposal facility over the recent 10 years. The Original Application PA assumed that Class C waste would only make up 1% of the CWF volume. Thus, the PA showed that performance objectives would be met with a Class C inventory 10 times that of the Original Application.

- LC 143 was removed (text replaced with "reserved") to remove the detailed list of the types of Class A, B, and C waste that could be accepted for disposal, and
- Sections 3.2 and 4.0 of the Waste Acceptance Criteria (WAC) in Attachment C were updated regarding disposing waste streams not specifically authorized by the license because waste streams are no longer detailed in the license.

In the review of the Original Application, the disposal of large quantities of DU was prohibited pending further evaluation of the long-term dose to future receptors. The updated PA provided an analysis of the effects of DU. Based on the PA analysis and other technical review, TCEQ proposes that DU be disposed of and grouted in the original metal canisters within modular concrete canisters (MCC) or in the In-Cell Non-Containerized Disposal Unit at the greatest depth operationally possible in the disposal units. DU in the form of uranium hexafluoride is prohibited. The updated PA demonstrated that the performance objectives of 30 TAC 336.723-727 would be met with the authorization for disposal of large quantities of DU.

- LC 46 has been rewritten and updated to revise the prohibition of disposing waste which was not evaluated in the original land disposal facility application and adding the requirement that the Licensee ensures all waste received for disposal complies with the performance objectives specified in 30 TAC §336.723 as demonstrated by the results of the updated information from the performance assessment.

- Accordingly, LC 46.A no longer includes language regarding the disposal prohibition on uranium enrichment waste, uranium conversion waste, uranium deconversion waste, and large quantities of DU or similar material.
  - Accordingly, LC 46.B no longer includes language regarding waste streams containing DU in concentrations greater than ten (10) nanocuries per gram and adds a new requirement that waste streams containing DU in concentrations greater than ten (10) nanocuries per gram be disposed at the greatest depth possible in the disposal units in either Modular Concrete Canisters (MCC) or in the In-Cell Non-Containerized Disposal Unit consistent with procedure LL-OP-7.1 if the waste is kept inside the original metal canisters.
  - Accordingly, LC 46.C no longer discusses potential amendments and instead adds a new limits acceptance to waste streams to those classified as Class A, B, or C LLRW.
- Section 3.2 of the WAC adds a prohibition of uranium hexafluoride and deletes DU from uranium enrichment, DU from uranium conversion/deconversion, large quantities of DU, DU exempt radioactive materials (i.e., counterweights), and waste containing greater than 10 nanocuries per gram DU.

LC 89.F was added to require the Licensee to submit additional data to support the PA at any time upon request of the executive director during reviews of the PA, whether for an annual update or for an amendment request. Additionally, sensitivity and uncertainty analyses shall be performed and submitted upon request of the executive director.

The staff review of the expansion included an assessment of the report and engineering drawings. The drawings, sealed by a Texas Registered Professional Engineer, are submitted as preliminary designs. The report includes a description of the proposed expansion and sixteen engineering drawings. The drawings illustrate the phased expansion and the proposed transition between the existing disposal cells and future disposal cells. The drawings show planned revisions to surface drainage structures, contact and non-contact water ponds, associated piping, and basic infrastructure including roads, fences, and lighting.

The CWF horizontal boundary was expanded to the south and east. The expanded CWF landfill and buffer zone will remain within Section 25 where mineral rights are established. The CWF waste volume limit was increased from 2,310,000 cubic feet to 9,000,000 cubic feet. The CWF vertical boundary, which is the bottom of the compacted clay liner, was lowered from elevation 3,376 to elevation 3,358 feet above mean sea level (feet msl). The additional depth will accommodate five tiers of canisters in future CWF disposal cells. The February 17, 2014 supplement to the expansion application requested a modification to the license that would allow an increase in the CWF decay corrected radioactivity through minor amendment. The Executive Director determined that this supplement and license condition should be included in the major amendment. Specifications were established that allow the limit in decay corrected radioactivity for

disposal into the CWF to increase incrementally. Upon disposal of 2,000,000 curies (decay corrected) in the CWF, WCS may request, through a future minor amendment application, authorization for the disposal of waste with a total decay corrected radioactivity not to exceed 6,000,000 curies. Upon disposal of 4,000,000 curies (decay corrected) in the CWF, WCS may request, through a future minor amendment application, authorization for the disposal of waste with a total decay corrected radioactivity not to exceed 8,000,000 curies. Any future minor amendment application for an increase in CWF decay corrected radioactivity, when submitted, will be reviewed within the context of the performance assessment, under applicable license conditions and any other applicable requirements. As with all minor amendments recommended for approval, they will be subject to public notice and comment.

The FWF vertical boundary, which is the bottom of the compacted clay liner, was lowered from elevation 3,367 to elevation 3,348 feet msl. The additional depth will accommodate seven tiers of canisters in future FWF disposal cells. There was no change to the existing FWF horizontal boundary or buffer zone. The FWF Containerized Disposal Unit (CDU) was expanded to include all of the area within the existing FWF boundary. Future disposal cells in the expanded CDU would replace the Non-Containerized Disposal Unit (NCDU). Therefore, references to the NCDU in the license were removed. The FWF waste capacity was increased from 26,000,000 cubic feet to 31,000,000 cubic feet. The applicant did not request an increase in the FWF waste volume limit of 26,000,000 cubic feet in license condition 7.B, and did not request an increase in the FWF radioactivity limits.

Other license conditions related to the expansion of the CWF and FWF were revised as follows:

- LC 7.A increases the CWF waste volume limit from 2,310,000 cubic feet to 9,000,000 cubic feet.
- LC 65 requires submission of preliminary construction documents for review by the executive director no later than 120 days prior to the planned commencement of facility construction. The executive director may waive the requirement to submit final construction plans no later than 60-days prior to the planned commencement of facility construction and may approve final construction plans within the 120-day period.
- LC 66 changes the lowest point at which waste will be disposed from 3,370 to 3,355 feet above mean sea level. The requirement that the northernmost edge of the FWF be relocated prior to the initial phase of construction was removed.
- LC 75 requires that changes to the CWF and FWF design must be submitted by the Applicant under the seal of a Texas Registered Professional Engineer.
- The term “record drawing” in LC 83 was added to clarify the term “as built drawing”. LC 83 requires that deviations in the record drawings from the design and construction proposed must be explained and presented under the seal of a Texas Registered Professional Engineer in a written submittal for review by the executive director.
- LC 102, which included disposal requirements for the FWF NCDU, was removed because future disposal cells in the expanded FWF CDU will replace the NCDU.

- LC 105 removes the reference to the NCDU.
- LC 140 removes the reference to the NCDU. The term “Canister Disposal Unit” was removed for clarity.
- The term “Containerized Disposal Unit” in LC 142.A was removed for clarity.
- LC 142.B removes the reference to the NCDU.
- LC 145 creates the process to increasing the CWF decay corrected radioactivity through minor amendment application. This license condition also adds specifications allowing limits in decay corrected radioactivity to increase incrementally for disposal into the CWF.
- The term “Canister Disposal Unit” in LC 156 was removed for clarity.

The review of the FA amendment application included an assessment and update of the amounts required for financial assurance. There are four financial assurance calculations that must be performed annually: decommissioning and closure, post-operational surveillance, institutional control, and corrective action. Quantity estimates and supporting calculations provided in the application were reviewed for accuracy.

The method for calculating financial assurance was changed from estimating the projected facility build out at the end of the license to evaluating the waste received in existing CWF and FWF cells; evaluating existing buildings and infrastructure; and estimating planned expansions or modifications for the following year. This method allows, for the current period, a reduction in financial assurance for decommissioning and closure; and allows a reduction in financial assurance for post-operational surveillance. The financial assurance for institutional control is increased for this period.

License condition 185 was modified as follows:

- The first paragraph of LC 185 was updated to remove the requirement that financial assurance must be provided prior to accepting waste.
- LC 185.A was modified to require \$33,300,000 for decommissioning and closure, \$9,220,000 for post-operational surveillance, and \$22,790,000 for institutional control, which are in 2012 dollars. The provision for reducing the amount of financial assurance for closure and decommissioning to reflect the cost of on-site treatment and discharge of leachate was removed. The requirement that the annual update be based on received waste volumes and/or the schedule of costs listed in Tables A-3, A-4, and A-6 was removed.
- LC 185.B was modified to require \$20,000,000 in 2012 dollars for corrective action. The provision for converting this amount to current dollars was removed. The provision for increasing this amount \$3,350,000 annually to account for cumulative waste received was removed.

Several license conditions were modified to correct errors, update the current situation at the site, or remove duplicative text:

- LC 9.A, LC 11.P, and section 3.2 of Attachment C (Waste Acceptance Criteria) were modified by replacing Greater than Class C waste with waste specifically prohibited from disposal in accordance with THSC Chapter 401 and Chapter 336, Radioactive Substance Rules.
- LC 158.H.2 was modified by replacing the reference to Attachments A and B with a reference to the Radiological Environmental Monitoring Program (REMP) since Attachments A and B have been removed from the license in a prior amendment.
- LC 164.D was deleted because LC 164.D and LC 167 had duplicative text.
- LC 196.A was modified to replace the stabilization building with the mixed waste treatment facility to correct an error.
- LC 196.C was modified to replace the reference to LC 187.C, which was removed in a prior amendment, with the type of waste that LC 187.C described: "commercial mixed waste that cannot be processed into a form that has a current disposal option."
- Attachment C, section 4.1.6 was modified to replace the reference to sections 4.1.7-4.1.9 to a reference to sections 4.1.7-4.1.8 to fix an error.
- Attachment C, section 4.2.1 was modified by replacing the reference to section 8.0 to a reference to section 9.0 to correct an error.

License condition 196.B was modified to remove the authorization for storing the low-level mixed waste generated at the Safety Light Superfund Site until June 30, 2014 because this waste has now been disposed.

License condition 207.A was modified to add the

- C-14 application for amendment dated August 5, 2013 with revision dated November 22, 2013 and supplement dated January 28, 2014,
- Expansion application for amendment dated August 5, 2013 with revision dated October 28, 2013 and supplements dated February 17, 2014 and February 21, 2014, and
- Financial assurance application for amendment dated August 8, 2013 with supplements dated December 13, 2013 and February 28, 2014.

#### Process for Reaching a Final Decision and Opportunities for Public Participation

Once the draft license is completed, it is sent to the TCEQ Office of the Chief Clerk for public notice. Notice of the application, proposed license, and the technical summary are made through direct mailing and newspaper notices in accordance with 30 TAC Chapter 39 with instructions for submitting public comments, requesting a public meeting, and requesting a contested case hearing. Written public comments and requests for a public meeting and/or contested case hearing must be submitted to the Office of the Chief Clerk within 30 days after the notice is published.

The executive director will consider public comments in making a final decision on this license application. The TCEQ will hold a public meeting if the executive director determines that there is a significant degree of public interest in the application, or if

requested by a local legislator. After the deadline for public comments, the executive director will consider the comments and prepare a response to all relevant and material or significant public comments.

A contested case hearing will only be granted if a request was made by the applicant or the executive director; or made by an affected person if the request complies with applicable submission requirements, is timely filed, and is pursuant to a right to hearing authorized by law. The executive director may issue final approval of the application unless a timely contested case hearing request or request for reconsideration is filed. If a timely hearing request or request for reconsideration is filed, the executive director will not issue final approval of the license and will forward the application and request to the TCEQ Commissioners for their consideration at a scheduled commission meeting. If hearing requests are granted, the hearings will be conducted by the State Office of Administrative Hearings. Decisions regarding the license may be reconsidered in response to a Motion for Rehearing or a Motion for Reconsideration and by appeal to a District Court in Travis County.

### **Preliminary Decision and Recommendation**

The executive director has made a preliminary decision that the proposed license amendment, if issued, will meet all statutory and regulatory requirements. Therefore, the Executive Director recommends that the proposed major amendment and draft permit be approved.